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Title : Individual surface feeding strategies of minke whales in a confined environment

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Abstract : In response to a sharp decrease in food productivity in the Laurentian Channel Head (LCH) of the St. Lawrence River beginning in 2000, many minke whales (Balaenoptera acutorostrata) who exhibited small-scale site fidelity left the area. Others, however, began exploiting feeding grounds in the mouth and fjord of the Saguenay River where physical features combine to create a dynamic environment characterized by visible fronts, upwellings and rip tides, which push prey to the surface.

Here, we present a descriptive account of minke whale surface feeding behaviour in the Saguenay based on photo-identification techniques developed by Tscherter. Between 2000 and 2003, observations were taken regularly (weather permitting) from small zodiacs. Samples of surface feeding were taken for identified individuals, which included blow rates, dive times, surfacing manoeuvres, food intake, orientation and environmental observations.

Feeding strategies in the Saguenay included corralling manoeuvres such as chin-up blows, frog lunges, rolls and sub-surface blows. Final feeding strikes were mainly ventral and lateral arcs with occasional vertical, lateral and oblique lunges. Surface feeding in the LCH observed until 2000, on the other hand, included only strikes (lunges and arcs). Studies of Saguenay feeding behaviour demonstrated the whales' ability to adapt their behaviour to optimize feeding efficiency in a changing environment. It was also found that preferred manoeuvres varied among individuals in the same feeding area and that individuals occasionally copied novel behaviours from others.

The Saguenay mouth is a confined region in which boat traffic has increased significantly in recent years. Examining the interactions between surface feeding minkes and boats will be critical for future management decisions, particularly considering that this area is part of a national marine park. A detailed understanding of minke foraging will also prove useful for future comparative studies between regions and among individuals in order to understand long-term behavioural changes.